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EXAMINER

PENDER JR, M

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No. 09/339,340	Applicant(s) Hsu
Examiner Michael Pender	Group Art Unit 2762



Responsive to communication(s) filed on Sep 27, 1999.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**

Claim(s) 1-80 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-80 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

**Application Papers**

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

## DETAILED ACTION

1. Claims 1-80 have been examined.

### ***Common Knowledge***

2. The Examiner interprets the following terms of art used in Applicant's claimed invention, according to their art-accepted meanings:

***control*** – In a graphical user interface, an object on the screen that can be manipulated by the user to perform an action. The most common controls are buttons, which allow the user to select options, and scroll bars, which allow the user to move through a document or position text in a window.

See Microsoft Press, Computer Dictionary 117 (1997).

***dialog box*** – In a graphical user interface, a special window displayed by the system or application to solicit a response from the user. *See also* windowing environment.  
*Compare* integrator.

*Id.* at 143.

***graphical user interface (GUI)*** – A type of environment that represents programs, files, and options by means of icons, menus and dialog boxes on the screen. The user can select and activate these options by pointing and clicking with a mouse or, often, with the keyboard. A particular item (such as a scroll bar) works the same way to the user in all applications, because the graphical user interface provides standard software routines to handle these elements and report the user's actions (such as a mouse click on a particular icon or at a particular location in text, or a key press); applications call these routines with specific parameters rather than attempting to reproduce them from scratch.

*Id.* at 220.

***user interface (UI)*** – The portion of a program with which a user interacts. Types include command-line interfaces, menu-driven interfaces, and graphical user interfaces.

*Id.* at 488.

Art Unit: 2762

**window** – In applications and graphical interfaces, a portion of the screen that can contain its own document or message. In window-based programs, the screen can be divided into several windows, each of which has its own boundaries and can contain a different document (or another view into the same document).

*Id.* at 508.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 22 recites the limitation "said objects" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-80** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter in view of *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 U.S.P.Q.2d 1596 (Fed. Cir. 1998).

Additionally, the Examiner invites Applicants to review the Federal Circuit's detailed explanation of the *State Street Bank* decision in *AT&T v. Excel*, as well as the *Trovato* and *Warmerdam* precedents that the Federal Circuit cited as authorities in the *State Street Bank* decision. See *AT & T Corp. v. Excel Communications Inc.*, 50 U.S.P.Q.2d 1447 (Fed.

Art Unit: 2762

Cir. 1999); *In re Trovato*, 33 U.S.P.Q.2d 1194 (Fed. Cir. 1994), *In re Warmerdam*, 31 U.S.P.Q.2d 1754 (Fed. Cir. 1994).

***A process that merely manipulates an abstract idea or performs a purely mathematical algorithm is nonstatutory despite the fact that it might inherently have some usefulness.*** (In *Sarkar* , 588 F.2d at 1335, 200 USPQ at 139, the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a "process" under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.)

***For such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts.*** See *Alappat* , 33 F.3d at 1543, 31 USPQ2d at 1556 - 57 (quoting *Diamond v. Diehr* , 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* at 1569, 31 USPQ2d at 1578 - 79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse* , 56 U.S. (15 How.) at 114 - 19). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.

See MPEP § 2106 (emphasis added). The claimed method is not limited to a practical application; thus Applicants' invention merely discloses a *algorithm for the manipulation of an abstract idea*, not a practical application of the abstract idea or mathematical algorithm in the technological arts. Applicant claims:

Art Unit: 2762

**Claim 1:**

*A computer-implemented method for detecting differences between first and second graphical programs, wherein the method executes on a computer including a display, wherein the first and second graphical programs comprise graphical code, the method comprising:*

*determining differences between said first graphical program and said second graphical program; and displaying an indication of said differences on the display.*

Read in view of the specification, Applicant teaches *creating data structures to represent the first and second graphical programs wherein the data structures include a directed graph for each of the block diagrams and user interface panels of each of the graphical programs.* (page 7, lines 15-17); *matching the first data structure to the second data structure according to a matching algorithm* (page 7, line 23 to page 8, line 26) and *displaying an indication of the stored differences on the display screen of the computer system* (page 9, lines 16-17).

The Examiner notes that the Federal Circuit has repeatedly held that claims reciting a method for creating and manipulating a data structure do not constitute patent eligible subject matter. See *In re Trovato*, 33 U.S.P.Q.2d 1194, 1198 (Fed. Cir. 1994); citing to *In re Warmerdam*, 33 F.3d 1354, 31 U.S.P.Q.2d 1754 (Fed. Cir. 1994). The Examiner quotes from the Court's opinion in *Trovato*:

*The methodical application of arithmetic operations to data placed within a numerical configuration in order to determine the least cost path through a mathematically structured graph amounts only to a generality or disembodied concept, outside the subject matter listed in Section 101.* Without further application or connection to a technical art, we cannot say that Trovato's claims pass muster under the alternative analysis of subject matter expressed in *Warmerdam*.

Art Unit: 2762

See *In re Trovato*, 33 U.S.P.Q.2d 1194, 1198 (Fed. Cir. 1994) (emphasis added). The Examiner interprets that Applicant's "*determining differences between said first graphical program and said second graphical program*" limitation merely relates to creating abstract data structures and performing a methodical series of mathematical operations. The Examiner interprets that Applicant's claimed invention consists of the methodical application of arithmetic operations to data placed within a numerical configuration to determine the differences between the two data structures.

The Examiner further interprets that Applicant's "*displaying an indication of said differences on the display*" limitation does not impart patentable weight to the claimed invention. The Examiner quotes from Trovato:

*Although some of Trovato's claims describe an electronic readout of the computed data, it is well-established that mere post-solution display does not render patentable a mathematical algorithm.* As our predecessor court noted in *Walter*, "[i]f Section 101 could be satisfied by the mere recordation of the results of a nonstatutory process on some record medium, even the most unskilled patent draftsman could provide for such a step." 618 F.2d at 770, 205 USPQ at 409. See also *Abele*, 684 F.2d at 909, 214 USPQ at 688; *In re de Castelet*, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977). Nor do Trovato's applications describe inventions which manipulate physical qualities, as with the inventions held to fall within statutory subject matter in cases such as *Arrhythmia*, 958 F.2d at 1059, 22 USPQ2d at 1039 (analyzing electrocardiographic signals); *In re Taner*, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (conversion of seismic signals); and *Application of Sherwood*, 613 F.2d 809, 819, 204 USPQ 537, 546 (CCPA 1980), cert. denied, *Diamond v. Sherwood*, 450 U.S. 994 (1981) (conversion of seismic traces).

*Id.* at 1197 (emphasis added). The Examiner interprets that the Federal Circuit's holding that post-solution display of the result does not render a mathematical algorithm patentable is highly relevant to this application.

Art Unit: 2762

The Examiner further considered whether the fact that Applicant's data structures relate to graphical programs could distinguish the present application from *Trovato*. The Examiner quotes from *Trovato*.

[C]iting our predecessor court's decision in *In re Bradley*, 600 F.2d 807, 202 USPQ 480 (CCPA 1979), aff'd *Diamond v. Bradley*, 450 U.S. 381 (1981), *Trovato* argues that the claimed data structure is a physical entity, consisting of electrical or magnetic signals and requiring interaction between the processing and memory apparatus of a computer.

*Id.* at 1196-97. The Examiner notes that the court interpreted that data structures are not physical entities, and even if they were, the pre-processing activity of loading the data structures would not render the claims patentable.

*Trovato's applications [do not] describe inventions which manipulate physical qualities, as with the inventions held to fall within statutory subject matter in cases such as *Arrhythmia*, 958 F.2d at 1059, 22 USPQ2d at 1039 (analyzing electrocardiographic signals); *In re Taner*, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (conversion of seismic signals); and *Application of Sherwood*, 613 F.2d 809, 819, 204 USPQ 537, 546 (CCPA 1980), cert. denied, *Diamond v. Sherwood*, 450 U.S. 994 (1981) (conversion of seismic traces). Indeed, the claimed invention does not even take the actual step of gathering the data from the "physical task space" that is arranged into the recited "configuration space data structure," a procedure which in itself cannot render an otherwise nonstatutory subject matter patentable. See *Grams*, 888 F.2d at 840, 12 USPQ2d at 1828; *In re Sarkar*, 588 F.2d 1330, 1335, 200 USPQ 132, 139 (CCPA 1978); *In re Chatfield*, 545 F.2d 152, 158, 191 USPQ 730, 736 (CCPA 1976), cert. denied, *Dann v. Noll*, 434 U.S. 875 (1977).*

*Id.* at 1197-98. The Examiner concludes that the fact that Applicant's data structures are created from graphical programs does not render the claimed invention statutory. The Examiner concludes that the claimed invention is not directed to statutory subject matter under 35 U.S.C. § 101.

**Claims 2-80** are rejected for the same reasons as claim 1.

Art Unit: 2762

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1 is rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Applicant's claimed invention is clearly anticipated by the *ObjectMake Windows Client (ObjectMake)*, by Continuus Software, Copyright 1996. Applicant claims:

**Claim 1:**

*A computer-implemented method for detecting differences between first and second graphical programs, wherein the method executes on a computer including a display, wherein the first and second graphical programs comprise graphical code, the method comprising:*

*determining differences between said first graphical program and said second graphical program; and displaying an indication of said differences on the display.*

The Examiner notes that *ObjectMake Windows Client* is a software configuration management system for applications having Graphic User Interfaces (GUI).

*ObjectMake* teaches a method for generating and comparing two graphics programs, specifically two versions of the same program, using the bill-of-materials.

*ObjectMake* teaches the "History View -> Compare" function for comparing two graphical programs in Figure 22 on page 89, clearly anticipating Applicant's "*determining differences between said first graphical program and said second*

Art Unit: 2762

*graphical program*" limitation. *ObjectMake* also teaches the "Product Differences" display in Figure 23 on page 90, clearly anticipating Applicant's "*displaying an indication of said differences on the display*" limitation. The Examiner concludes that *ObjectMake* clearly anticipates Applicant's claimed invention.

**Claims 5, 7, 9-11, 13, 15-18, 20-22, 34, 36-37, 40-45, 50-52, 58, 60, 62-66, and 68-71**

are rejected for the same reasons as claim 1.

**Claim 3:**

*The method of claim 1, wherein said first and second graphical programs each include a user interface panel which displays data.*

The Examiner notes that a ***user interface*** is an inherent feature of computer programs.

***User interface*** panels are equivalent to ***windows*** and ***dialog boxes***, which are inherent features of ***graphical user interfaces***. The Examiner concludes that *ObjectMake* clearly anticipates Applicant's claimed invention.

**Claims 4, 8, 57 and 61** are rejected for the same reasons as claim 3.

**Claim 54:**

*The memory medium of claim 52, wherein said objects include controls and indicators.*

The Examiner notes that ***controls*** are an inherent feature of ***graphical user interfaces***. The Examiner further notes that indicators are a subset of ***controls***. The Examiner concludes that *ObjectMake* clearly anticipates Applicant's claimed invention.

Art Unit: 2762

***Examiner's Comment***

9. The Examiner notes that Applicant could overcome the rejection of claims 1-80 under 35 U.S.C. § 101 by limiting the claimed invention to an established practical application, such as eliminating errors in a computer program. However, Applicant must relate the "determined differences between the first and second graphical programs" to the process of eliminating the errors in the computer program.

10. The Examiner notes that Applicant could overcome the rejection under 35 U.S.C. § 102 by limiting the claimed invention to computer programs composed in graphical coding languages without an underlying text layer. Applicant must distinguish the claimed invention from "diff" tools for graphical programs written in traditional GUI languages within the scope of the invention.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Michael Pender** whose telephone number is **(703) 308-0147**. The Examiner can normally be reached on Monday - Friday from 8:00 A.M. to 4:30 P.M.

If attempts to reach the Examiner by telephone are unsuccessful, the **Examiner's Supervisor, Tariq Hafiz** can be reached at **(703) 305-9643**. Any response to this office action should be **mailed to:**

**Commissioner of Patents and Trademarks Washington, D.C. 20231**

**or faxed to:**

Art Unit: 2762

(703) 308-9051, (for formal communications intended for entry), or:

(703) 308-1396, (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

**Hand-delivered responses should be brought to:**

**Crystal Park II, 2121 Crystal Drive Arlington, Virginia, (Receptionist).**



Michael Pender

March 13, 2000



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PRIMARY EXAMINER